

XI.—NEW ENGLAND SPIDERS OF THE FAMILIES DRASSIDÆ,
AGALENIDÆ AND DYSDERIDÆ. BY J. H. EMERTON.

Drassidæ.

THE *Drassidæ* have long bodies like the *Agalenidæ* and *Lycosidæ*, but most of them are a little flattened above and walk with their bodies near the ground; the first and second feet are directed forward and the third and fourth backward. The feet have but two claws, under which is usually a cluster of hairs sometimes so thick as to conceal the claws. The under sides of the tarsi and metatarsi are sometimes covered with hairs, especially on the first and second legs, and these hairs are often flattened or thickened at the end. The cephalothorax is low in front, the highest part being in the middle or farther back. The eyes are in two nearly straight rows. The spinnerets are cylindrical with the tubes on the end, and the upper and under pairs are nearly equal in length.

None of the *Drassidæ* make webs for catching insects, though many of them make nests, usually flattened tubes, in which they hide in winter or while moulting or laying eggs. Most of them live on the ground and hide under leaves and stones. A few, as *Clubiona*, *Chiracanthium*, and *Anyphana* live in summer on plants several feet above the ground.

Many species are found adult at all seasons and probably live several years.

The cocoons are flat, some are attached by one side, but most of them lie loose in the nest or hiding place.

A large number of American species were described and figured by Hentz, most of them under the generic name *Herpyllus*. Of these I have identified nine: *H. descriptus*, *crocatus*, *alaris*, *ecclesiasticus*, *ater*, *bilineatus*, *variegatus*, and *Clubiona saltabunda*, *pallens*. Several others have been described by Thorell, and of these I have identified *Gnaphosa brumalis* Thor., Proc. Boston Soc. Nat. Hist., vol. xvii, 1875, and *Gnaphosa conspersa*, *G. scudderi*, and *Prosthesima melancholia* Thor., Bulletin Hayden's U. S. Geol. Survey, vol. iii, No. 2, 1877. The specimens of this family in the Museum of Comparative Zoology in Cambridge, Mass., have been named by Keyserling, and I have adopted his names for several species though they are not yet published.

Micaria Westring.

This genus was first separated from *Drassus* by C. Koch under the name of *Macaria*, which had before been used for a genus of *Lepidoptera*, and was therefore changed by Westring to *Micaria* in 1851. They are all small and slender spiders with the cephalothorax arched upward in the middle, without any dorsal groove or only a thick opaque spot in place of it. The abdomen and usually the cephalothorax are covered with flattened scales sometimes brightly colored and iridescent. The tarsus and metatarsus of the first and second feet have a double row of flattened hairs on the under side.

Hentz's *Herpyllus auratus*, found farther south, belongs to this genus and is nearly related to *M. longipes*.

Micaria longipes, new sp.

PLATE III, FIGURES 1a, 1b, 1c, 1d, 1e, 1f, 1h.

Largest specimen 5^{mm} long. Pl. III, fig. 1. The cephalothorax is twice as long as wide, widest across the middle. Head not much narrowed. The eyes occupy half the width of the head. The front row is nearly straight, the upper row with the middle eyes highest. Eyes all nearly of the same size. The cephalothorax is highest in the middle, curving downward toward both ends. The abdomen is one-half longer than the cephalothorax and about as wide, blunt at both ends and drawn in a little at the sides and above about one-third its length from the front. The legs are long and slender, the fourth pair longest. The colors are light yellowish brown with gray hairs and scales which have green and red metallic reflections on the abdomen. The legs are darker from before backward, the front pair all light yellow except the femur, and the fourth and third pairs with longitudinal brown stripes that nearly cover the tarsal joints. The cephalothorax is without markings. The abdomen has a pair of white stripes at the constricted spot and a less distinct pair near the front end. At the hinder end it is almost black. The scales of the abdomen are of various forms, those of the white spot are long with several branches at the base figs. 1d, 1e, those of the front of the abdomen are more simple, fig. 1c, and those behind the white markings are half as wide as long with two rows of short branches fig. 1f at some distance from their edges. The under side of the abdomen is as dark as the upper side. The white markings extend under half way to the middle line. The sternum is nearly twice as long as wide, widest at the second pair of legs and narrowed to a point behind.

The maxillæ are a little notched on the outer sides and straight on the ends except at the inner corners. The labium is two-thirds as long as the maxillæ. It is narrowed toward the tip, where it is about half as wide as at the base, fig. 1*a*.

The male palpi are small, the patella and tibia are about of the same length; at the base of the tibia on the upper side is a large tooth nearly as long as the diameter of the palpus, and curved strongly forward, fig. 1*b*. The tarsus is as long as the tibia and patella together, and pointed at the end. The palpal organ is small, fig. 1*b*.

The epigynum of a female from Salem, Mass., appears as in fig. 1*h* with two oblique openings near the posterior edge.

Salem and Medford, Mass., under stones and leaves. Adult male in August and adult female in June.

Micaria montana, new sp.

PLATE III, FIGURES 2, 2*a*.

This is smaller than the common species. A female measures 4^{mm} long. The cephalothorax is not twice as long as wide and the widest part is behind the middle. The abdomen is twice as long as wide, not constricted or truncated at either end. The cephalothorax and legs are light yellow-brown, the legs lighter toward the ends. The abdomen is greenish brown with iridescent scales. Across the middle is a distinct narrow white line and a less distinct one crosses the front of the abdomen. On the hinder half of the abdomen are four or five white spots. The white markings extend a short way under the abdomen. The epigynum, Plate III, fig. 2*a*, has two oblique openings near the posterior edge turned more toward each other and less downward than in *Micaria longipes*.

Mt. Washington, N. H., July 1, 1874, east side, near the Ledge.

Geotrecha, new genus.

This genus includes a number of American spiders described by Hentz, under the name of *Herpyllus*. Besides *Herpyllus descriptus* and *crocatus*, *H. ornatus*, *H. longipalpus*, *H. marmoratus*, *H. cruciger*, *H. conarius*, *H. trilineatus*, probably belong in it. *H. descriptus* and *H. crocatus* were placed by Koch in the genus *Agroeca*, with which they agree in the shape of the maxillæ and position of the eyes. In this, he was followed by Keyserling, who named the specimens of that species in the Museum of Comparative Zoology, in Cambridge, Mass., *Agroeca crocata*. In the same collec-

tion another species, *Geotrecha bivittata*, is named by Keyserling *Castianeira bivittata*, the genus *Castianeira* having been named by Keyserling, in 1879, for a South American spider, with a long, slender cephalothorax and a slender abdomen with the front part hardened and differently colored from the softer part.

In our species of *Geotrecha*, the cephalothorax is about two-thirds as wide as long and narrowed in front, more in some species than in others. The abdomen is longer and a little wider than the cephalothorax. It sometimes has a small, hard patch at the front end which is of the same color as the rest of the back and not easily seen. The abdomen is round, not flattened above as it usually is in *Prothesima*. The legs are long and slender. The hairs on the under side of the first and second legs are only slightly flattened and thickened, and the claws concealed by a thick bunch of hairs. The maxillæ are nearly straight as in *Agroeca* and the labium is as short as wide. The eyes are close together in the middle of the front of the head, the front row nearly straight and the hind row with the middle eyes highest. The middle eyes of both rows are largest and farther apart than they are from the lateral eyes. The spinnerets are very small and close together. The colors are dark brown and black, with white or bright colored markings.

The male palpi have the patella and tibia both short and the tarsus long and tapering. The palpal organ is round at the base and tapers to a fine point. The epigynum has two simple openings directed backward, and differing in size and distance apart in different species.

Geotrecha bivittata.

Castianeira bivittata Keyserling, specimens in Cambridge Museum.

PLATE III, FIGURES 3a, 3b, 3c, 3d.

Length, 7 or 8^{mm}. Legs of fourth pair, 10 or 11^{mm}. The cephalothorax is widest across the middle in front of the dorsal groove, Plate III, fig. 3a, and is about half as wide at either the front or hinder end. The abdomen is usually about as long as the cephalothorax and widest at the hinder third. It is sometimes slightly drawn in at the sides and above over the front white marking. This is caused by contraction in alcohol, the front end of the abdomen being hardest contracts less than that part just behind it. The legs are long and tapering, the fourth pair longest.

The cephalothorax is dark brown. The abdomen is of the same color, a little lighter, with two white cross stripes, one about the middle of the back and the other, a less distinct one, farther for-

ward. The femora of all the legs are striped lengthwise with brown and yellow. The hind legs are brown with a little yellow on the upper side of the patella and tibia. The other legs are yellow, sometimes with brown stripes on the under side. The white marks on the abdomen extend underneath half way to the middle line. The front hard part of the under side of the abdomen is lighter than the hinder part, and the sternum is of the same color. The coxæ are lighter yellowish brown.

The epigynum shows through the skin as three dark spots and has two openings directed backward, fig. 3*d*.

The male palpi have the patella very short, about half as long as the tibia, fig. 3*b*. The tarsus is very large and dark colored, wide at the base and tapering toward the tip. The palpal organ is similarly shaped, with a rounded bulb through which the coiled tube can be seen, and a slender tip lying in a groove in the tarsus, fig. 3*e*.

Hentz's *Herpyllus zonarius* and *trilineatus* seem to be near this species.

It lives under leaves at all seasons of the year, and though not so quick in its motions as *crocata* is a difficult spider to catch except in cold weather, when it is often sifted from leaves in a torpid condition.

Massachusetts, Connecticut, and in N. Pike's Long Island collection.

The color is sometimes lighter, the whole cephalothorax above and below being light orange color, and the legs the same color, with the longitudinal brown stripes very narrow and indistinct.

In young individuals of both varieties the sternum is wider and more convex than in adults.

Geotrecha pinnata, new sp.

PLATE III, FIGURES 4, 4*a*.

The largest specimen is 7^{mm} long, cephalothorax, 3^{mm}.

The cephalothorax is shaped much as in *C. crocata*. The abdomen is oval, not so much narrowed in front as in the other species.

The cephalothorax is light brown. The abdomen is grayish brown with several white transverse stripes. The two widest stripes are in the same position as the two stripes of *C. bivittata*. On the front of the abdomen is another stripe, and on the posterior half are four or five others, some of them incomplete on the middle of the back. The femora of all the legs are light brown, the first, second and third legs are yellow, except the femora. The fourth legs have the tarsus and the ends of the tibia yellow, the rest light brown. Plate III, fig. 4.

Epigynum, like that of *crocata*, but with the holes larger and nearer together, fig. 4*a*.

The palpal organs and male palpi resemble those of *crocata*, but are a little larger.

Three specimens, of different ages, from Medford, Mass., under leaves with *C. bivittata*. Three adult females from Topsfield, Mass., Sept. 3d, under log in woods. Males and females in N. Pike's Long Island collection.

Geotrecha crocata.

Agroca crocata Keys., specimens in Mus. Comp. Zool, Cambridge, Mass.

♀ *Herpyllus descriptus* Hentz.

♂ *Herpyllus crocatus* Hentz.

PLATE III, FIGURES 3*b*, 3*c*, 3*d*.

Length of female, 8 to 10^{mm}; cephalothorax, 4^{mm}. The cephalothorax is nearly twice as long as wide and widest across the dorsal groove. It is not narrowed behind as much as in *C. bivittata*. The abdomen is usually longer than the cephalothorax and a little wider at the widest part.

The cephalothorax is very dark brown or black, and the femora and coxæ of all the legs are the same color. The abdomen is black with a bright red spot of variable shape and size at the posterior end. The spot turns yellow in alcohol. In some specimens it is wanting. In the males the red spot is usually larger, sometimes extending the whole length of the abdomen. The hind legs are black or brown their whole length, a little lighter at the ends; the other legs are yellow, except the femora. The under side of the body is all black.

The epigynum has two small round openings, wide apart, a little in front of the transverse fold. Plate III, fig. 3*d*.

The male palpi are much like those of *C. bivittata*, but the tarsus and palpal organ are only about half as large and the patella and tibia are nearly equal in length. The tibia has a short process on the under side. Figs. 3*b*, 3*c*.

This spider lives among stones in dry, open places. It is easily alarmed and moves very rapidly. The flat, parchment-like cocoons common on stones in pastures are probably made by this species.

Massachusetts and Connecticut, and in N. Pike's Long Island collection.

Prosthesima L. Koch.

Cephalothorax widest in the middle and more than half as wide in front. Eyes near together, occupying about half the width of the head. The middle eyes of both rows smaller than the lateral and nearer together than they are to the lateral eyes. Upper row straight, or the lateral eyes a little farther back. Sternum large and nearly as wide as long. Maxillæ wide in the middle and but little widened at the ends, Pl. III, fig. 6*a*. First and second legs with flattened hairs under the tarsus and part of the metatarsus.

Prosthesima atra.

Herpyllus ater Hentz.

Prosthesima funesta Keyserling, specimens in Mus. Comp. Zool., Cambridge, Mass.

Prosthesima melancholica Thorell, Bull. Hayden's U. S. Geol. Survey, Vol. III, 1877.

PLATE III, FIGURES 6, 6*c*, 6*d*.

Female, 8^{mm} long; cephalothorax, 3^{mm}. Male smaller. Cephalothorax and abdomen both a little flattened above. Cephalothorax narrow in front, about half as wide as in the middle. Plate III, fig. 6. Abdomen oval, the hinder half usually a little wider than the front. Sternum very large, almost as wide as long, fig. 6*a*. Maxillæ and labium large and a little shorter and wider than in *P. ecclesiastica*. Feet 1 and 2 with flattened hairs under the tarsus and half the metatarsus. Feet 3 and 4 with fine hairs in the same places.

The whole body is black in most individuals, sometimes, especially in the young, yellowish brown on the ends of the feet and under the abdomen.

Epigynum large and distinct with two small depressions in front and large openings behind surrounded by a thick brown rim, fig. 6*d*.

The male palpus is short with a very large tarsus, as long as the tibia and patella together and more than half as wide. The process on the outside of the tibia is about as long as the tibia itself and nearly straight. The palpal organ has a small fine tube and several small hooks and processes all at the tip end of the palpus, fig. 6*c*.

This spider lives under stones and leaves. The cocoon is flat on one side, by which it is attached, and convex on the other. It is white, or sometimes a little pink.

Mt. Washington, N. H., Eastport, Me., Massachusetts, and in N. Pike's Long Island, N. Y., collection.

P. melancholica was found by Dr. A. S. Packard at Montito, Colorado, 1875.

Prothesima depressa, new sp.

PLATE III, FIGURES 8, 8a.

A smaller species than *atra*. Female, 6^{mm} long. The head is much smaller than in *atra* and the eyes larger and closer together. Plate III, fig. 8. The cephalothorax and abdomen are black. The first and second legs have the tarsus and metatarsus pale yellow; the rest of the legs black except a pale spot on the outside of each femur. The third and fourth legs have the tarsus and metatarsus pale, the tibia black at the distal end, the leg becoming lighter from this point to the base. Underneath, the coxæ are darker from behind forward.

The epigynum has the openings at the sides, farther forward, and the ridges over them thicker and shorter than in *atra*, and the two little depressions in front appear to be wanting, fig. 8a.

Medford, Mass., July 23.

Prothesima ecclesiastica.*Prothesima propinqua* Keys.*Herpyllus ecclesiasticus* Hentz.

PLATE III, FIGURE 7, 7a, 7b, 7c, 7d.

This spider is about 8 or 10^{mm} long, a little smaller than *Gnaphosa conspersa* which it resembles in form and habits, but from which it is easily distinguished by its colors. The cephalothorax is black at the sides and has a whitish stripe in the middle. The abdomen is black at the sides with a bright white stripe in the middle that extends from the front end about two-thirds its length. At the hind end of the abdomen, just over the spinnerets, is another white spot. The legs are dull black turning to brown in alcohol, as does the cephalothorax. The under side of the abdomen is dark at the sides and light in the middle.

The eyes cover about half the width of the head. The two rows are nearly equal in length, the hinder only a little the longer. Seen from above, both rows appear straight. Pl. III, fig. 7.

The maxillæ are widened at the end, the outer corner sharp and the inner rounded off down to the lip. Fig. 7a.

The male is much smaller than the female but similarly marked. The male palpi are small. The patella and tibia are short, and the tarsus is as long as both together. The process on the tibia is slender and about equals the tibia in length. It is on the outer side, showing indistinctly from above. It is slightly forked at the tip. The

palpal organ is simple, with two short processes on the outer end. Fig. 7c, 7d.

The epigynum has a small oval opening at the posterior end of a dark area. Fig. 7b.

Under stones. Boston, Salem, Danvers, Wood's Holl, Mass.; Albany, N. Y.; Providence, R. I.

Pœcilochroa Westr., Simon.

PLATE IV, FIGURES 1a, 3a.

The cephalothorax is narrowed toward the front, as in *Prosthesima*, and more narrowed in males than in females. The two rows of eyes are far apart, the hinder row a little longer than the front row, with the lateral eyes farther back than the middle ones. The middle eyes are farther apart than they are from the lateral eyes. The labium is not much longer than wide and a little narrowed toward the end. The maxillæ are about twice as long as the labium. They are narrower at the base and widen to the insertion of the palpi. From the palpi the maxillæ curve inward and nearly meet in front of the lip. The outer corners are turned outward. Pl. iv, figs. 1a, 3a. The colors are bright and the markings distinct.

Pœcilochroa variegata.

Herpyllus variegatus Hentz.

Drassus variegatus Keyserling, specimens in Mus. Comp. Zool., Cambridge, Mass.

PLATE IV, FIGURES 1, 1b, 1c.

This is one of the most distinct and brightly colored species of the family. Pl. iv, fig. 1. The cephalothorax is bright orange, a little darker toward the eyes. The abdomen is black with three white transverse stripes from the middle of which a T-shaped white mark extends half way to the front stripe. On the front half of the abdomen the white stripes are usually partly colored with orange. The femora of the first and second legs are black. The distal end of the femur and both ends of the tibia of the fourth legs are black. The legs are otherwise orange colored. The hinder row of eyes is considerably longer than the front row, the rear lateral eyes being their diameter nearer the sides of the head than those of the front row. The head of the male is much narrower than that of the female. The male palpus has a process on the outer side of the tibia half as long as the tarsus, tapering toward the end and slightly bent inward at the tip. The tube ends near the outer end of the tarsus and is supported by a short thick process. Figs. 1b, 1c.

This spider is common under leaves in dry woods. Eastern Massachusetts; Dublin, N. H.; New Haven, Conn.

Pæcilochroa montana, new sp.

PLATE IV, FIGURES 2, 2a.

This species is a little larger and less brightly colored than *P. variegata*. Pl. iv, fig. 2. Female 8^{mm} long, cephalothorax 3.5^{mm}. The arrangement of the eyes and proportions of the body are about the same. The cephalothorax and legs are dark brown, the hinder ones a little the lighter. The abdomen is black with a pair of white spots near the front end and another pair across the middle nearly united in the middle. The sternum and coxæ are dark brown. The epigynum is dark brown with a small opening at the hind end. Fig. 2a.

Mt. Washington, N. H., on the road to Gorham.

Pæcilochroa bilineata.

Herpyllus bilineatus Hentz.

PLATE IV, FIGURE 3, 3a.

A very distinct species on account of its markings. Cephalothorax white, with two black stripes and a fine black line on the edge, each side. Pl. iv, fig. 3. Abdomen thickly covered with long hairs, white in the middle and at the sides, and with two wide black stripes that do not extend quite to the end. The under side of the abdomen is white with a black stripe each side. Fig. 3a. The legs are covered with gray and white hairs.

The female is 7^{mm} long, cephalothorax 3^{mm}. The head is about half as wide as the middle of the thorax. The eyes are small, the middle pair in each row farther apart than they are from the lateral eyes. The two rows are widely separated. Sternum oval, widest in the middle. Spinnerets long. Epigynum small, with a single opening directed backward just in front of the transverse fold.

Gnaphosa Latr., 1804.

Gnaphosa brumalis Thorell, Proc. Boston Soc. Nat. Hist., vol. xvii, 1875.

Gnaphosa scudderi Thorell, Bull. Hayden's U. S. Geol. Survey, vol. iii, 1877.

PLATE IV, FIGURES 5, 5a, 5b.

This species is a little smaller than *G. conspersa*. A female of the usual size is 10^{mm} long, cephalothorax 4^{mm}, while *conspersa* grows to the length of 12 or 15^{mm}.

The colors are the same as those of *conspersa*; cephalothorax and legs dark brown and abdomen rusty black.

The epigynum has the openings rather wider apart, and the front middle appendage flat, wrinkled at the edges, and with a hard spot in which is a small hole near the end. This appendage resembles the finger in the same position in *Epeira*. Pl. iv, fig. 5*b*.

The male palpus has the tibia rather shorter and its outer process longer than in *conspersa*, fig. 5. The tube of the palpal organ is only about half as long, its base being nearer the middle of the tarsus. The middle hooked appendage is as long as in *conspersa*, but much more slender, fig. 5*a*.

Under stones on Mt. Washington, N. H., from the ledge upward, with cocoons of eggs July 1.

Males and females from Ellis Bay, Anticosti, July 23, S. Henshaw in collection of Boston Soc. Nat. Hist.; females with cocoons of eggs.

The specimen named by Thorell was from Strawberry Harbor, Labrador, collected by A. S. Packard in 1864.

G. scudderi was found by A. S. Packard at the Garden of the Gods, Colorado, in 1875.

Gnaphosa conspersa Thorell, Bull. Hayden's U. S. Geol. Survey, vol. iii, 1877.

Gnaphosa gigantea Keyserling, specimens in Mus. Comp. Zool., Cambridge, Mass.

PLATE IV, FIGURES 4, 4*a*, 4*b*, 4*c*, 4*d*, 4*e*.

This spider is 12 to 15^{mm} long and rusty black in color. Some specimens freshly moulted are dull yellowish or greenish gray, and old individuals have a brownish color. The whole body and the legs are covered with long hairs. The cephalothorax is wide in front and the eyes are not so close together as in *Pythonissa imbecilla*, or in *Prosthesima*. The hinder row of eyes is a little longer than the front row, and the lateral eyes are larger and farther back than the middle ones. Pl. iv, fig. 4. The middle hinder eyes are a little oval and oblique, diverging toward the front. The mandibles are large and strong, on the inner side under the claw they have a wide flat tooth with irregular and serrated edge, and near the inner corner two large pointed teeth, fig. 4*b*. The maxillæ are very wide and curve inward so as nearly to meet around the end of the lip. Their outer corners are rounded, fig. 4*a*. The spinnerets are stout and the lower pair are widely separated. The male differs but little from the female. The male palpi have the patella and tarsus both short and the

tarsus as long as both of them. The tibia has a short pointed process extending forward over the tarsus, fig. 4*c*. The tarsus is curved outward at the end. The tube of the palpal organ is slender and extends along the outer edge of the tarsus for its whole length. At the outer end of the palpal organ is a short process flat at the end and curved downward, fig. 4*d*. The epigynum has a long opening on each side and a short transverse pit in front of them in the middle, fig. 4*e*. In western specimens the opening at the hinder part of the epigynum has the sides more nearly parallel, not diverging forward as much as in those from New England.

It lives under stones and leaves. The cocoon is white and flat, with its diameter as great or greater than the length of the spider. The female stays near the cocoon, but makes no nest.

All over New England, from the White Mountains, N. H., to New Haven, Connecticut; Adirondacks, N. Y.

Thorell's specimens were collected by A. S. Packard in 1875. A female with cocoon of eggs on Gray's Peak, Colorado, over 11,000 feet high, on fir, Kelso's cabin, Colorado, and a small one from Idaho, all adult females and all smaller than most eastern specimens.

Pythonissa Koch.

Pythonissa imbecilla Keyserling, specimen from Kentucky in Mus. Comp. Zool., Cambridge, Mass.

PLATE IV, FIGURES 6*a*, 6*b*, 6*c*, 6*d*.

The male is about 4^{mm} long and the female 5^{mm}. The two rows of eyes are nearly of the same length, the hinder row almost straight, with the lateral eyes only slightly farther back than the middle ones. The lateral eyes of both rows are larger than the middle eyes. The maxillæ are almost as wide as long and are curved inward so as to touch in front of the lip. Pl. iv, fig. 6*a*. The front edge of the maxillæ is straight with the corners only slightly rounded. The mandibles are small and the wide tooth under the claw, fig. 6*b*, can be plainly seen just in front of the maxillæ with another pointed tooth on its inner side. The cephalothorax, both above and below, and the legs are orange-brown with black hairs. The abdomen is bluish black with a few whitish hairs at the hind end and around the four muscular spots near the middle. The epigynum, as in fig. 6*d*. The patella and tibia of the male palpus are very short and not so thick as the femur. The tarsus is as long as the patella and tibia together. The palpal organ is large and complicated, the tube showing plainly across the outer end, fig. 6*c*.

Under stones. Males from Dublin, N. H., and Dedham, Mass. Females from Bluehill, Milton, Mass.

Drassus.

PLATE IV, FIGURE 7a.

The genus *Drassus* of Walckenaer included the greater part of the present family *Drassidae*, as well as some *Agalenidae* and *Ciniflonidae*. From this, various genera have been separated from time to time, leaving the present *Drassus* an ill defined group containing species differing greatly among themselves and forming several groups, which further study will no doubt make it possible to separate. The only two species which I place in this genus belong, one near the European *D. lapidosus* and the other near *D. troglodytes*. In these species the cephalothorax is wider in front and less flattened than in *Gnaphosa* and *Prosthesima*. The eyes are small and separated by spaces at least as wide as their diameter. The front row is nearly straight. The posterior row is longer, and curved with the lateral eyes lower than the middle. The middle hinder eyes are oval and turned apart toward the front, and are nearer together than to the lateral eyes. The mandibles and maxillæ are large and stout. The maxillæ are widened on both sides beyond the insertion of the palpi, the outer corners are slightly rounded and the inner corners slope obliquely toward the lip. Pl. iv, fig. 7 a. The lip is about half as long as the maxillæ. The colors are gray and drab with fine short, white or gray hairs, and only faint markings on the abdomen.

Drassus saccatus, new sp.

PLATE IV, FIGURES 7, 7c, 7d.

This is one of the most common of our *Drassidae*. Pl. iv, fig. 7. The female grows to be 12^{mm} long, with legs 10^{mm} to 15^{mm}. The color is light gray sometimes with indistinct transverse dark markings on the abdomen. The color of the front part of the head is a little darker and the feet and mandibles and maxillæ are brown. The abdomen is long and slender as in *Clubiona*. The epigynum is small and has two dark round depressions just in front of the fold, fig. 7d.

The male is smaller and more slender. The male palpi are very long the patella, and tibia are together as long as the femur, and all are as long as the femur of the first legs. The tibia has a small process on the outer side, fig. 7c. The tarsus is long and narrow,

and the palpal organ is small with a short tube near the distal end, fig. 7c.

These spiders live under stones in a large bag of silk in which the female stays with her cocoon of eggs. In the early summer a male and female live together in the nest, the female often being immature.

White Mountains, N. H., to Connecticut.

Drassus robustus, new sp.

PLATE IV, FIGURES 8, 8a, 8b, 8c.

This is a smaller and shorter legged species than the preceding. Pl. iv, fig. 8. The female is 8^{mm} long. The colors are darker and redder, especially toward the head. The sternum, maxillæ and mandibles are dark brown. The head is as wide as in *D. saccatus*, and the eyes are a little closer. The epigynum is large, light colored in the middle, and with a dark ridge each side, fig. 8a. The male is much smaller than the female. The palpal organs and tarsi are large and round. The tarsus is short and has a short curved process that extends over the tarsus on the upper side, fig. 8b, 8c.

Medford, Mass., July.

Clubiona Latr.

Cephalothorax very wide in front. Front row of eyes straight, or with the middle pair a little higher than the lateral, nearly equal in size and equidistant, or the middle a little larger or farther apart than they are from the lateral. Upper line of eyes longer and slightly curved with the middle pair highest, the eyes all larger than those of the front row, and the middle pair usually farthest apart. Plate v, fig. 8c. Maxillæ long, narrow at the base, and much widened beyond the insertion of the palpi. Fig. 10. The mandibles are stout and convex at the base in the females. In the males the mandibles are more slender, longer and tapering at the tips, sometimes with sharp ridges along the sides. Legs slender, the fourth pair longest. Feet with long claws, the first and second pairs with the under side of tarsus and metatarsus covered thickly with hairs widened at the end. The abdomen is truncated in front and tapering behind. The colors are always pale gray and drab, usually with darker brown on the head around the eyes, and rarely a light brown or gray pattern on the back of the abdomen. The body is covered with short and fine hairs which give it a soft silky appearance without concealing the color of the skin.

Most species vary greatly in size, some mature individuals being twice as large as others of the same age and sex. They live on plants in summer, and in winter hide under bark or stones, and have at all seasons flat tubular nests of silk.

Clubiona crassipalpis Keyserling, specimens in Mus. Comp. Zool., Cambridge, Mass.

PLATE V. FIGURES 1, 1*a*, 1*b*.

Male 8^{mm} long, sometimes smaller. Cephalothorax two-thirds as wide as long. Male mandibles convex in front for two-thirds their length, with a low ridge along the inner side and around the end of the convex portion. The thin keel on the front outer edge is sharp but short, extending only a little over the convex part.

The tibia of the male palpus is as long as the patella. The process on the outer side is long and slender, the end curved inward over the tarsus. Plate v, figs. 1, 1*a*, 1*b*.

Abdomen marked with brown irregular veins, the rest of the body pale. Head a little darker toward the front.

Massachusetts, Connecticut, Albany, N. Y., Providence, R. I., and in N. Pike's Long Island collection.

Clubiona mixta, new sp.

PLATE V, FIGURES 2*a*, 2*b*.

Resembles *C. crassipalpis* and of about the same size. The mandibles of the male are similarly shaped, but the convexity and the internal ridge are less prominent. The male palpi are a little more slender and the patella proportionally longer. The process of the tibia has the upper tooth nearer the hook than in *crassipalpis*, making the process appear wider and stouter, fig. 2. The tarsus is a little smaller than in *crassipalpis*. Plate v, figs. 2*a*, 2*b*.

Salem and Marblehead, Mass.

Clubiona tibialis, new sp.

PLATE V, FIGURES 3, 3*a*, 3*b*.

Male 6.5^{mm} long, another 5^{mm} long. The male mandibles are slender and tapering, without any distinct ridges on the front. The male palpi are short and the tibia and tarsus both very large. The tibia is very complicated in shape, having a large hook on the outer side, a short thick process on the inner side, and a thickened edge in front that meets a slight elevation on the back of the tarsus. The tarsus is long and large, and so is the palpal organ. Plate v, figs. 3, 3*a*.

A female, apparently of this species, is 6^{mm} long. The front legs are shorter than in the male; the mandibles are stout and convex in front. The epigynum is large with a deep rounded notch in the middle and a slight ridge each side. Fig. 3*b*.

Eastern Massachusetts, and in N. Pike's Long Island collection.

Clubiona canadensis, new sp.

PLATE V, FIGURES 4, 4*a*, 4*b*, 4*c*.

Male 7^{mm} long, others smaller. Mandibles tapering and rounded, without ridges on the upper side. Male palpi short, tibia shorter than patella, with a complicated process on the outer side ending in a long sharp point with a round notch in the upper edge. Plate v, figs. 4, 4*a*. The tarsus is more than twice as long as wide, bent downward at the end. The palpal organ has a large bulb with small appendages at the end. Fig. 4*b*.

Female a little larger, epigynum with only two depressed spots just in front of the transverse fold. Fig. 4*c*.

Abdomen dark, with brown irregular lines. Cephalothorax pale, not darkened toward the front.

The common species on Mt. Washington, N. H., from the Glen to the highest trees, under stones and in moss; also from Montreal, Canada.

Clubiona minuta, new sp.

PLATE V, FIGURES 11, 11*a*, 11*b*.

This little spider is about 3^{mm} long and in its general appearance resembles a pale *C. rubra*. The male palpi, however, show it plainly to be a different species. The patella is longer than wide, as in *rubra*, and the tibia is short and wide at the end. Its appendage on the outer side is very simple, appearing from above like a thin spine at the side of the tarsus and not overlapping it. Pl. v, fig. 11. From the outer side it is seen to be flat, wide at the base, and tapering from the middle to a blunt point, fig. 11*a*. The palpal organ has a small hook on the inner side, fig. 11*b*, very different from the large hook of *C. rubra*.

Male from Readville, Mass., June 15, on bushes.

Clubiona pusilla, new sp.

PLATE V, FIGURES 5, 5*a*, 5*b*.

One male 6^{mm} long, another only 4^{mm}. Head nearly as wide as the thorax.

Front row of eyes half as long as the head is wide, the eyes of equal size and equidistant; upper row, longer by the diameter of the lateral eyes. The upper eyes are larger than those of the front row, and all about the same size, the middle pair a little farther apart than they are from the lateral eyes.

Mandibles with a thin keel on the front outer edge, half as long as the mandible.

Colors, pale on the legs and palpi; cephalothorax brownish yellow, darkest in front; abdomen covered with fine brown markings.

Male palpi with the tibia shorter than the patella. A flat wide process on the outer side, Pl. v, fig. 5*a*, extends forward over the tarsus. The bulb of the palpal organ nearly fills the under side of the tarsus, the tube is short and curved round the end of the tarsus so as to point backward; over the base of the tube is a short stout hook, instead of a large hook as in *rubra*, fig. 5.

Salem and Beverly, Mass.

Clubiona rubra Keyserling, specimens in Mus. Comp. Zool., Cambridge, Mass.

PLATE V, FIGURES 6, 6*a*, 6*b*, 7, 7*a*, 7*b*, 8, 8*a*, 8*b*.

This is one of several closely similar species, the classification of which cannot well be understood without comparing large numbers from many different places. *Clubiona abbottii* L. Koch, is this species or very close to it.

Males and females are 3 to 4^{mm} long. The eyes are large in proportion to the size of the spider, and cover the whole width of the front of the head.

The color after keeping in alcohol is redder than in most species.

The epigynum is notched at the hinder edge, the depth of the notch varying in different individuals. Pl. v, figs. 6*c*, 7*c*.

The male palpi have the patella and tibia of the same length. The relative length of these joints differs in the allied species. The tibia is wider than long and has a large appendage on the outer side, divided from the main part of the tibia by a deep notch on the under side, figs. 6, 7, 8. The appendage consists of two parts, figs. 6*a*, 7*a*, 8*a*, the under one longest and a little notched at the end. The size and length of this process varies in different individuals. On the dorsal side of the tibia, on the front edge, is a small tooth, varying in size in different spiders, figs. 6, 7, 8. The palpal organ has a very large middle process, figs. 6*b*, 7*b*, 8*b*.

White Mountains, N. H., to Connecticut.

Clubiona ornata, new sp.

PLATE V, FIGURES 9, 9a.

Female 8^{mm} long. The abdomen is pointed behind and more narrowed in front than in most species. Both abdomen and cephalothorax are less flattened than in most species. The mandibles of the female are not very stout and less swelled at the base than usual.

This is one of the few species with a colored pattern on the abdomen. A dark stripe runs along the middle, of a different width in different individuals, but generally narrow and tapering behind. At the sides of this are two white or light yellow stripes with irregular edges, and beyond this the brown sides of the abdomen. Pl. v, fig. 9. The body is pale underneath. The epigynum is notched at the edge of the transverse fold, fig. 9a.

Mt. Washington, Dublin, N. H., and Massachusetts.

Clubiona excepta L. Koch.*Clubiona pallens* Hentz.

PLATE V, FIGURES 10, 10a, 10b, 10c, 10d.

Female 7^{mm} long, cephalothorax 3^{mm}. The abdomen is not usually much larger than the cephalothorax and unlike most species has a pattern on the back similar to that of *Amaurobius* and *Tegenaria*, or in very light individuals consisting of three rows of gray spots on a white or pale yellow ground. Pl. v, fig. 10a. The cephalothorax and legs are light yellowish brown, darkest on the head and mandibles. The spinnerets are rather long. The epigynum has two round brown spermathecae that show through the skin, close together just in front of the transverse fold. In front of these are two oblique openings directed forward and inward.

The males are not much smaller than the females. The male palpi are slender, the tibia only a little longer than the patella, and the tarsus nearly as long as both together. The tarsus is oval, about half as wide as long, and rounded on the upper side. The papal organ is narrow and covered by the tarsus. On the inner side is a thin appendage, the free edge of which lies along the middle line and covers the long straight tube. On the outer side near the end of the tube is a straight process directed forward, and at its base a hook directed backward, fig. 10c. At the end of the tibia on the outer side is a short flat process with a small curved tooth on the upper corner, fig. 10b.

Massachusetts, Connecticut, and in N. Pike's Long Island collection. Under stones and leaves, sometimes in white cocoons.

Chiracanthium C. Koch.**Chiracanthium viride**, new sp.PLATE V, FIGURES 12, 12*a*, 12*b*, 12*d*.

Female 8^{mm} long, cephalothorax 3^{mm}. Cephalothorax three-fourths as wide in front as at the widest part, fig. 12*a*. Eyes spreading over nearly the whole width of the head; the lateral eyes close together; the upper row a little longer than the front row, eyes in both rows at equal distances apart. Abdomen widest in the middle, tapering behind. First pair of legs a third longer than the fourth. Sternum widest just behind the first pair of legs and tapering to a point between the fourth coxae. The mandibles and maxillæ are dark brown. The rest of the body is pale yellow, the cephalothorax a little darker than the rest, and a gray stripe covers the middle of the front of the abdomen. The epigynum has a large oval opening covered by a hard dark brown lump. Pl. v, fig. 12*d*.

In the male the mandibles and legs are longer and the difference in length between the first and fourth legs is greater. The palpi are as long as the second femur. The tibia is twice as long as the patella, and has on the outer side a thin black process, a little curved toward the tarsus, and on the upper side a thick blunt process extending a little way over the back of the tarsus. Between the two processes of the tibia a sharp process of the tarsus extends backward, a little curved down at the end, figs. 12*a*, 12*b*.

Female, Dedham, Mass., July 26. Male, Saugus, Mass., June 12.

Trachelas L. Koch.**Trachelas ruber** Keyserling.PLATE V, FIGURES 13, 13*a*, 13*c*, 13*d*.

Female 10^{mm} long, cephalothorax 4^{mm} long and 3^{mm} wide. The cephalothorax is widest in the middle opposite the second pair of legs and narrows to 2^{mm} at the hinder end, the sides of the hinder half being nearly straight. The head is very wide and high, the highest part half way between the eyes and the dorsal groove.

The eyes are all about the same size and far apart. The front row is nearly straight, the middle eyes a little higher than the lateral, this row is half as long as the head is wide. The hinder row is much longer, the middle eyes are about as far from the front middle pair as they are from each other, the lateral eyes are about the same distance from the middle ones, but much farther back on the head, figure 13. The mandibles and maxillæ are large and resem-

ble those of *Clubiona*. The abdomen is oval and very regular in shape. Pl. v, fig. 13. The cephalothorax is very thick and hard, and dark brown. The abdomen is light yellow with no markings, except four small brown spots near the middle, and a gray streak over the dorsal vessel. The hairs are very short and scattered so that the skin appears soft and smooth.

The *first pair of legs* is a little the longest instead of the fourth pair, as in the European species, and both the first and second pairs are much stouter than the third and fourth. The palpi are slender, the tarsal joint thickened at the tip. The legs are darker from back to front, the front pair reddish brown, not so dark as the cephalothorax, and the hind pair is yellow. The epigynum has two dark brown round depressions close together.

Pale individuals are sometimes found with all the legs yellowish white, cephalothorax light brown with white eyes, and the abdomen light gray.

The males are smaller than the females, sometimes not more than half as large. The tibia of the palpus is shorter than the patella, and has a short hook on the outer side. The tarsus is small and the bulb of the palpal organ is so large that it extends beyond the tarsus on both sides. The bulb is round and has a distinct tube which rests in a groove of the end of the tarsus, figs. 13c, 13d.

Under stones and leaves and sometimes on fences in autumn. In general appearance and color it resembles *Dysdera*. Massachusetts and Connecticut, and in N. Pike's Long Island collection.

Anyphæna Sundevall.

PLATE VI, FIGURES 1, 1a.

Cephalothorax highest behind. Eyes of the front row equal in size and equidistant, the lateral eyes a little the highest. Upper row of eyes longer than the front row, the middle eyes highest, all of the same size and larger than those of the front row and at equal distances apart. Abdomen widest in the middle and a little pointed behind.

Maxillæ long and widened at the tips but not so much widened as in *Clubiona*.

The opening of the tracheæ is farther forward than in other genera, in some species approaching nearly to the epigynum. Pl. VI, fig. 1a.

The colors are pale. The male palpi are large and complicated.

Anyphæna rubra, new sp.

PLATE VI, FIGURES 1, 1a, 1b.

Female 8 or 9^{mm} long, cephalothorax 3^{mm}. Abdomen half longer than the cephalothorax and about as wide, tapering backward from the middle to the spinnerets, Pl. VI, fig. 1. The cephalothorax and legs are pale yellowish brown. The cephalothorax has two darker longitudinal bands. The abdomen is white or light yellow with two stripes made up of brown or red spots. The mandibles are dark brown. This is the largest and stoutest species.

The epigynum has two large curved openings, turned toward each other, between which is a long depression widened at the front end. The long spermathecae show through the skin just behind the openings, fig. 1b. I have not seen the adult male.

Massachusetts and Connecticut, and in N. Pike's Long Island collection. On plants and under stones.

Anyphæna incerta Keys., specimens in Mus. Comp. Zool., Cambridge, Mass.

PLATE VI, FIGURES 2, 2a, 2b, 2c, 2d.

Female 5^{mm} long, cephalothorax 2^{mm}. The cephalothorax is about a quarter longer than wide, rounded at the sides, and highest in the middle. The front of the head is very low, so that the front eyes are not their diameter from the base of the mandibles. The front row of eyes is nearly straight. The upper row is longer and more curved, with the middle eyes highest, and the eyes of this row are all larger than those of the front row. The abdomen is large in the female, as in all the species of this genus, widest just behind the middle and a little pointed behind, Pl. VI, fig. 2.

The color is light brownish yellow with gray markings. The cephalothorax has two indistinct longitudinal stripes and a fine black line over the legs on each side. On the abdomen are two rows of faint spots and oblique lines. The legs have a few faint markings across the joints.

The maxillæ are straight at the sides and rounded at the ends on the inner side. The labium is small and not half as long as the maxilla.

The epigynum has a large dark brown process in the middle at the front end, fig. 2d.

The tibia of the male palpus has a large double process on the outer side, the upper branch of which is pointed, and the lower blunt with a rounded tooth on the upper side, figs. 2a, 2b, 2c.

Under leaves in winter, Salem and Swampscott, Mass.

Anyphæna calcarata, new sp.

PLATE VI, FIGURES 3, 3a, 3b, 3c, 3d.

The same size as *A. incerta*, but lighter colored and with longer legs and longer spines. The front legs are longer than the fourth in both sexes. The markings are the same as in the other species and the spots on the front of the abdomen are more distinct than in the others.

The epigynum has a thin edge extending backward a little over the transverse fold and reaching from one respiratory opening to the other. In the middle is a small hole with a short tooth-like ridge directed backward on each side. Pl. vi, fig. 3d.

The male palpi have the outer half of the femur twice as thick as the base with a few large spines on the upper side near the end. The patella is as wide as long and shorter than the tibia. The appendage on the outer side of the tibia is very small and does not extend forward beyond the base of the tarsus, fig. 3b, 3c; near the base of the tibia on the under side is a blunt tooth, fig. 3a, 3c. The tarsus resembles that of *A. incerta*. The palpal organ has the middle process very stout and curved inward at the end, fig. 3a.

The coxæ of the fourth pair of legs have on the under side a small pointed process directed outward. The coxæ of the third pair have on the under side a curved process directed inward with a short tooth on the hinder side near the middle, and in front of this a short blunt tooth directed backward, fig. 3.

West Haven, Conn., July, on plants, and in N. Pike's Long Island collection.

Anyphæna saltabunda.*Clubiona saltabunda* Hentz.

PLATE VI, FIGURES 4, 4a, 4b, 4c, 4d.

This is a very long-legged and slender species. The female is 4^{mm} long, the abdomen but little longer than the cephalothorax. The front leg is 10^{mm} long, fourth leg 7^{mm}. The palpi are slender and as long as the femora of the first legs. The whole body is white with two broken gray bands on the cephalothorax and two rows of gray spots on the abdomen.

The male is about as large as the female. The male palpi are long, the tibia of very complicated shape. It is curved outward and has near the base on the outer side a long, thin forked process. Pl. vi, fig. 4. The tarsus is of the usual shape. The palpal organ has a

short slender tube resting against the tip of the tarsus. Behind the tube is a thin hooked process, and on the inner side a long process with small black teeth at the end, fig. 4, 4*a*, 4*b*, 4*c*.

The epigynum has a long transverse opening a little in front of the fold, fig. 4*d*.

Massachusetts, and Meriden, Conn.

Phrurolithus Koch and Westring.

Micariosoma Simon.

Small spiders sometimes with bright markings and iridescent scales. The legs of the first and second pairs have a double row of strong spines under the tibia and metatarsus. Pl. VI, fig. 5*b*. The maxillæ are short and wide. The palpi of the males are very large compared with the size of the spider, and have a long stout process on the outer side of the tibia. The arrangement of the eyes and the pattern of the dorsal markings resemble those of *Agroeca*.

Phrurolithus pugnatus, new sp.

PLATE VI, FIGURES 6, 6*a*, 6*b*, 6*c*.

2^{mm} to 3^{mm} long. Cephalothorax round, narrowed at the head as in *alarius*. Abdomen usually shorter and rounder than in *alarius*. Pl. VI, fig. 6. Cephalothorax and legs bright yellowish brown. Abdomen dark brown with transverse light markings which vary in different individuals. Light yellowish beneath, except around the spinnerets and epigynum.

Epigynum with two oblique openings at the front end farthest from the transverse fold. Parts of the palpal organ are sometimes found in the openings of the epigynum, fig. 6*e*.

The male palpi are large in proportion to the size of the spider. The femur has a short process near the base on the inner side. The patella is as short as wide, but the tibia is nearly as large as the tarsus and wider at the distal end. On its inner side is a long stout tooth projecting forward, and on the outer side a longer curved one as in *P. alarius*. The tibia is oval and the palpal organ short and round, not extending backward at the base as in *alarius*, figs. 6*a*, 6*b*.

Herpyllus parvus Hentz resembles this species.

Massachusetts and Connecticut.

Phrurolithus alarius.*Herpyllus alarius* Hentz.

PLATE VI, FIGURES 5, 5a, 5b, 5d, 5f, 5g, 5h.

Full grown female 4^{mm} long, cephalothorax 1.5^{mm}. Pl. VI, fig. 5.

The cephalothorax is nearly as wide as long, rounded at the sides. The head is about half as wide as the thorax and the eyes are close together and all about the same distance apart, fig. 5a. The middle eyes of the upper row are oval and turned obliquely, nearest together towards the front.

The abdomen is oval, widest behind, and a little flattened on top. The legs are long and slender, except the tibiae and metatarsi of the first and second pairs which are twice as thick as the same joints of the other legs, fig. 5. The legs are light yellow or white with gray hairs, except the tibia and patella of the first pair, which are black or dark gray with the tip of the tibia white. The tibia and patella of the second pair are marked with lighter gray in the same way. The tibia and metatarsus of the first and second pairs have two rows of strong black spines on the under side, fig. 5b.

The cephalothorax is light yellowish with a black edge each side and a few irregular radiating gray marks forming two indistinct longitudinal stripes. The abdomen is gray with transverse white markings which vary greatly in shape and size in different individuals, figs. 5, 5a. The abdomen is covered with flat branched hairs that are iridescent, changing from light grayish-green to pink with the motions of the spider, fig. 5d. The under side of the body is pale with a dark mark in front of the spinnerets, and in some individuals a few irregular marks along the sides.

The male palpi are large. The femur is thickened on the under side near the outer end, forming a short black process covered with short stiff hairs. The patella and tibia are both short. The tibia has on the outer side a long process slightly curved downward that extends along the side of the tarsus for half its length, fig. 5g. The palpal organ is so long that its base extends over the end of the tarsus, fig. 5f.

The epigynum has two large openings turned toward the sides a little in front of the transverse fold, fig. 5h.

It lives on and under stones in dry open ground and runs with great swiftness short distances at a time. When still it lies close to the stone with the tibiae drawn up over the back, as in fig. 5, the thickened and colored legs of the first pair are then the parts of the spider most easily seen.

Massachusetts and Connecticut.

Agrœca Westring.*Agrœca pratensis*, new sp.

PLATE VI, FIGURES 7, 7a, 7b, 7c, 7d, 7e.

Female 7^{mm} long, cephalothorax 3^{mm}. The cephalothorax is widest and highest behind the middle, the head a little more than half as wide as the thorax. The abdomen is widest across the hinder third and not much pointed behind. Pl. VI, fig 7. The front row of eyes are close together, the middle ones half their diameter highest. The upper eyes are a little larger and about their diameter apart, the middle pair much the highest, fig. 7.

The mandibles are very convex in front and flat at the sides. The maxillæ are straight on both sides and a little rounded on the inner corners. The labium is half as long as the maxillæ and as wide as long. The sternum is large and as wide as long, fig. 7a. The legs are stout, the fourth pair longest. Under each metatarsus are three pairs of slender spines, under the first and second tibiæ two pairs, and under the third and fourth tibiæ three pairs. The cephalothorax, legs, and mouth parts are light brownish yellow. The cephalothorax has a fine dark edge on each side and a row of radiating dark lines each side forming two broken dark longitudinal bands. The abdomen has two rows of gray oblique markings on a light ground, fig 7. Epigynum with a long brown piece in the middle, fig 7e.

Male about the same size with the abdomen a little smaller. The male palpi are large and stout. The patella and tibiæ are the same length, the latter a little bent and with a short pointed spine on the outer side. The tarsus and palpal organ are short and wide. The palpal organ has a short blunt process on the outer side that projects over the edge of the tarsus, figs. 7b, 7c, 7d.

This spider lives under leaves and in short grass and resembles a *Lycosa* in its gait and general appearance, and also the common *Anyphana incerta*.

Eastern Massachusetts; Providence, Rhode I.; Albany, New York.

Agalenidæ.

The *Agalenida* have the cephalothorax longer than wide, with the cephalic part higher than the thoracic, and distinctly separated from it by grooves or marks at the sides. The head is usually higher than in the *Drasside* and the body less flattened. The upper spinnerets are two jointed, the terminal joint pointed and provided with spinning tubes along the inner side. In most species these are longer

than the other spinnerets. The feet have three claws. The *Agalenidae* make large flat or irregular webs with a tube or hiding place at one side from which they run out and seize the insects that alight on the web. The *Agalenidae* run on the upper side of the web with their back upward, while *Linyphia*, which makes similar flat webs, runs on the under surface, back downwards.

Cœlotes Blackwall.

The difference between *Calotes* and *Tegenaria* is not a very distinct one. I have placed in *Calotes* those stouter and shorter legged species with the mandibles prominent in front, and in which the palpi of the males have processes on both patella and tibia.

The eyes are in two rows, nearly straight, and differ but little in size and distance apart. The mandibles are stout and convex. The maxillæ are wide at the ends, rounded on the outer corners, and obliquely truncated on the inner. The labium is about half as long as the maxillæ, a little narrowed and truncated at the tip. The colors are dark gray and brown.

Cœlotes medicinalis.

Tegenaria medicinalis Hentz.

PLATE VII, FIGURES 1a, 1b.

Female 12^{mm} long; cephalothorax 5^{mm}, fourth leg 15^{mm}. Front row of eyes straight, the middle eyes largest, eyes of upper row all of the same size and about equal distances apart, the middle eyes highest. The lateral eyes of both rows are close together, those of the upper row farthest toward the sides. Head high and wide, distinctly separated from the thorax by grooves each side. Abdomen oval, widest behind. Legs moderately stout.

Cephalothorax yellowish brown, darkest in front, marked with radiating gray lines forming two longitudinal dark bands. Abdomen gray with irregular pale spots. A double row of oblique pale spots in the middle, in most specimens broken and irregular, fig. 1. The legs are light yellowish brown with light indistinct gray rings.

The spinnerets are short.

The epigynum has a large piece in the middle with a branch each side that extends outward and forward ending in a point. In front are two small rounded teeth directed inward. Pl. VII, fig. 1a.

Male palpus short, with a large and wide tarsus. The patella and tibia are both short and of about the same length. The outer pro-

cess of the patella is half as long as the patella and blunt and crooked at the end. The tibia has on the upper side a short pointed process near the base and a blunt one near the end on the outer side, both concealed by a curved ridge. On the under side of the tibia is a process directed forward. The tube of the palpal organ is slender and supported at the end by two large processes, fig. 1*b*.

Chateaugay Lake, Adirondacks, N. Y., from F. A. Bowditch, 1878 ; Swampscott, Mass., May 8.

Cœlotes longitarsus, new sp.

PLATE VII, FIGURES 2, 2*a*.

Male 7^{mm} ; cephalothorax 3.5^{mm}. Head wide and high, highest half way between the eyes and the dorsal groove. First leg almost as long as the fourth. Legs stout. Abdomen oval, the hinder half a little the wider. Cephalothorax and legs yellowish brown, a few radiating darker lines on the thorax, and the front of the head a little darker. Legs darker toward the tips. Abdomen dark gray with a median lighter stripe in front and a double row of lighter oblique marks on the hinder half, much as in *medicinalis*.

The patella and tibia of the male palpi are both as short as wide. The patella has a long tooth, widest and truncated at the tip, directed forward on the outer side. The tarsus is widest at the base and pointed at the tip. At the base on the outer side it has a stout process extending backward and inward as far as the patella. Plate VII, fig. 2.

A small female found at the same time and probably the same species has a small, simple oval opening at the posterior part of the epigynum. Fig. 2*a*.

Mt. Carmel, Conn.

Cœlotes montanus, new sp.

PLATE VII, FIGURES 3, 3*a*.

12^{mm} long ; cephalothorax 5^{mm} ; 4th leg of female 18^{mm}, 4th leg of male 20^{mm}.

Epigynum with the holes open, and oblique turned nearly forward. Plate VII, fig. 3.

Male palpus with short patella and tibia, the tibia shortest. The patella has a short conical, black spine on the outer side near the end, directed forward, under this is a smaller spine. On the outer side of the tibia, which is shorter than the inner side, is a short process turned forward a little at the tip. Fig. 3*a*.

The colors and markings are like those of the two preceding species. The legs, especially of the male, are a little longer in proportion to the size of the body.

Chateaugay Lake, Adirondacks, N. Y., from F. A. Bowditch. A small male from New Haven, Conn., is apparently of this species. Its palpi differ slightly from those of the Adirondack males as shown in figs. 4, 4a.

Cœlotes hybridus, new sp.

PLATE VII, FIGURES 4, 4a.

This species is only distinguished from *C. longitarsus* by small differences in the shape of the male palpi. The spur at the base of the tarsus is very short and extends backward to a short process on the middle of the tibia. The posterior inner corner of the tarsus is differently shaped from this part in *longitarsus*, having a deep notch shown in figs. 4, 4a. The tibia is a little longer than that of *longitarsus* and shaped much like that of *medicinalis*. The patella resembles that of *longitarsus*. In size, markings, and colors this is like both *medicinalis* and *longitarsus*. The palpal organ is almost exactly like that of *longitarsus*.

One male from Chateaugay Lake, Adirondacks, N. Y., from F. A. Bowditch.

Tegenaria Latr.

These spiders differ from *Cœlotes* in having the legs longer and more slender and the abdomen generally rounder and shorter. The mandibles are less convex in front, the palpi of the males have no processes on the patella, and the palpal organ is proportionally smaller than in *Cœlotes*.

Tegenaria derhamii Scopoli, 1763; Thorell, 1873.

Tegenaria civilis Blackwall, 1861.

Tegenaria domestica Simon, 1875.

PLATE VII, FIGURES 6, 6a, 6b, 6c.

This is a house spider found all over the world. Female 10^{mm} long; cephalothorax 5^{mm}. Plate VII, fig. 6. The legs are long and tapering, 4th leg 18^{mm} long. Tarsi and metatarsi slender. The head is high and wider in front than it is opposite the first pair of legs. The abdomen is short, only a little longer than the cephalothorax. The front row of eyes is straight, the middle ones smallest. Upper row longer, lateral eyes close to those of the front row, the middle ones much higher, fig. 6.

Cephalothorax and legs light yellowish brown, the legs with some indistinct gray rings. Abdomen pale with gray markings which are usually plainest on the hinder half. The upper spinnerets are twice as long as the lower and the terminal joint is nearly as long as the basal.

Epigynum with small oblique openings at the sides. Fig. 6c.

The male palpi have the patella and tibia long and both about the same length. The tibia has on the outer side, about one-fourth its length from the end, a short blunt process, fig. 6a, under this is a shorter process lighter colored and directed forward, fig. 6b. The tarsus is slender and pointed and the appendages of the palpal organ are small. Figs. 6a, 6b.

Tegenaria brevis, new sp.

PLATE VII, FIGURES 5, 5a, 5b, 5c.

A small species, 5 to 6^{mm} long. Cephalothorax two-thirds as wide as long. Abdomen short and widest behind. The mandibles are small and but little convex in front. The cephalothorax and legs are pale yellowish brown with black hairs, the legs and palpi are lightest at the base and darker toward the ends. The spines are very long and slender. The abdomen is in some individuals pale with dark hairs; in others there is a gray herring-bone marking, and gray marks along the sides.

The male palpi are slender and without any appendages on the patella. The tibia has a short stout tooth on the outer side a little behind the end. The tarsus is small and pointed. The palpal organ is round and too large to be covered by the tarsus. Plate VII, fig. 5. The head of the male is narrower than that of the female, and the thorax wider, figs. 5b, 5c.

The epigynum appears to the naked eye like two parallel dark brown marks. It has a large posterior opening, widest behind, and partly divided into two at the front edge, fig. 5a.

The short round abdomen and gray markings make this spider resemble *Scatoda marmorata*.

Mt. Washington. N. H.; Massachusetts; New Haven, Conn.

Cicurina Menge, 1871. Simon, 1875.

This genus differs but little from *Caelotes* except in the palpi of the males which have the patella without processes, the tarsus long and narrow, and the tibia short with a large appendage on the outer side. The tube of the palpal organ is long and supported in various complicated ways.

Cicurina complicata, new sp.

PLATE VII, FIGURES 7, 7a, 7b.

This is a small, stout species, the largest individuals measuring 7^{mm} in length, and the cephalothorax 3^{mm}. The cephalothorax, legs, and palpi are uniform yellowish brown. The abdomen is pale with scattered gray markings both above and below, in some individuals forming an indistinct herring-bone pattern on the dorsal side. The sternum is as wide as long and nearly as wide in front as in the middle. The mandibles are stout, and in the females very convex in front. In the males the head is narrower and the mandibles smaller.

The palpi of the males have the patella simple and about as long as wide. The tibia has a short tooth near the base on the outer side, the middle part is turned inward, and on the outer side at the end is a large flat and crooked appendage that in its natural position appears to be part of the palpal organ. Plate VII, fig. 7. In fig. 7a the process is shown from the side partly turned away from the palpal organ. The tarsus is long and narrow and rounded at the tip, fig. 7b. The tube of the palpal organ is very long, beginning at the base of the tarsus it runs along the inner side around the tip, where it is supported by the edge of a flattened appendage, and backward along the outer side, the end being under the flat tibial process.

The epigynum has a simple oval opening behind, and the tubes show through the skin in light-colored individuals.

Blue hill, Milton, Mass., and Salem, Mass., under leaves, in winter.

Hahnia Koch.

Upper eyes all about the same size, the middle pair highest and farthest back and farther from each other than they are from the lateral eyes. Front eyes nearer together, the middle ones highest. The lateral eyes of both rows close together.

The spinnerets are in a single transverse row, the upper pair being outside the others. The outer pair has two nearly equal joints and the next pair have a short second joint at the tip.

The opening of the tracheæ is in the middle of the abdomen instead of directly in front of the spinnerets, as in most of the family.

Small spiders resembling *Tegenaria* and *Celotes*, except in the spinnerets.

Hahnia bimaculata, new sp.

PLATE VII, FIGURES 8, 8a, to 8f.

Length, 2.5^{mm}. Eyes large, both rows with the lateral eyes lowest. Lateral eyes much nearer together than the middle pairs. Front eyes a little the larger, both rows strongly curved, the middle eyes highest. Maxillæ short and wide, the front edge straight except on the inner corner. Sternum as wide as long, widest opposite the second legs. The spinnerets are long, the terminal joints of the outer pair nearly as long as the basal joint. The tracheal opening is nearer the epigynum than the spinnerets. Plate VII, fig. 8.

The cephalothorax, sternum, and mouth parts are reddish brown. The abdomen is light gray with many irregular pale spots and a double row of pale oblique markings in the middle. In the middle of the front half of the abdomen are two orange colored spots. The under side of the abdomen is pale with a few gray spots. The legs are pale with gray rings, two rings on the femur, tibia, and metatarsus. The skin over the epigynum is very transparent and shows two convoluted tubes almost always unsymmetrical, figs. 8c, d, e, f. The male palpus has on the outside of the tibia, near the end, a pointed process as long as the diameter of the tibia. At the base of the patella on the outer side is a small pointed black process curved a little forward, fig. 8b. The tarsus is nearly as wide as long but slightly pointed at the tip. The palpal organ is flat with a long thin tube extending along the inner side around the end, fig. 8a.

Common under dead leaves. Massachusetts, Connecticut, and Mt. Washington, N. H.

Hahnia radula, new sp.

This spider resembles *H. bimaculata* but is nearly twice as large. On the under side of the first and second legs and palpi of the male the hairs are raised on short transverse ridges so that the leg appears serrated when seen from the side. Plate VII, figs. 10, 10a. The gray markings of the abdomen and rings around the legs are less distinct than in *bimaculata*. The little spine at the base of the patella of the male palpi is shorter than in *bimaculata* and sharply turned forward. The appendage of the tibia is the same as in *bimaculata*, and the tarsi and palpal organs are very similar.

One male, Jaffrey, N. H., Aug. 1.

Hahnia cinerea, new sp.

PLATE VII, FIGURES 9, 9a, 9b.

Length, 1.5 to 2^{mm}.

Cephalothorax light, with dark radiating markings. Abdomen dark gray with scattered small white spots and a double median row of oblique light markings somewhat like *Cvlotes*. Plate VII, fig. 9. The legs are light yellowish brown with patellæ, coxæ, and the ends of the longer joints paler than the rest. The basal joints of the spinnerets are light yellowish brown like the legs. Terminal joint of outer spinnerets shorter than basal. The tracheal openings are nearer the spinnerets than the epigynum. The skin over the epigynum is rather opaque and but little of it can be seen. The palpi of the male have the patella and tibia both short and each has a long, slender process on the outer side which is flexible and variously curved at the end, fig. 9b. The tarsus is short and oval. The palpal organ has at the base a short feather-like appendage. The tube is slender and curved around the distal end of the tarsus. It has near the end a short soft appendage of the bulb, fig. 9a.

Salem, Beverly, Swampscott, Cambridge, Roxbury, Mt. Tom, Mass., and New Haven, Conn.

Agalena Walck.

Large hairy spiders with long legs and very long upper spinnerets. The head is high and the middle eyes of both rows are much higher than the others. The web is flat and more regular and closely woven than in *Tegenaria*.

Agalena nævia Walck. and Bosc., 1841; Hentz, 1848.

Agalena potteri Blackwall, Ann. and Mag. Nat. Hist., vol. xvii, 1846.

Agalenopsis albipilis Giebel, Zeitsch. Gesammt. Nat., 1869.

Agalena americana Keys., Zool. botan. Gesellsch., Wien, 1877, male with short-tubed palpal organs, from Illinois.

PLATE VIII, FIGURES 1, 1a, 1c, 1d, 1f, 1g, 1h, 1i, 1j, 1k, 1l, 1m, 1n.

This is the common grass spider all over the United States. It varies greatly in size. A large male measures 14^{mm} long, 4th leg 35^{mm}. A large female, 18^{mm} long, 4th leg 30^{mm}, while a small adult male is only 7^{mm} long, and the 4th legs 15^{mm}. Plate VIII, fig. 1.

The cephalothorax is long and the cephalic part separated distinctly from the thoracic by grooves radiating from the dorsal depression. The head is high and wide in front and contracted a little just in front of the first pair of legs. The two rows of eyes

are strongly curved, the lateral much lower than the middle pairs, so that the middle front eyes and the lateral hinder eyes form together a nearly horizontal line. The thorax is marked by radiating grooves between the legs. The abdomen is about twice as long as wide, widest in the front half, a little truncated in front where it overlaps the thorax, and tapering behind. The upper spinnerets are two or three times as long as the under. The legs are long and tapering, the fourth pair longest. The maxillæ are much widened at the tips and nearly straight on the front edges.

The cephalothorax has two wide longitudinal dark stripes. The abdomen has a light longitudinal stripe in the middle, straight in front, and herringbone-shaped in the hinder half, generally a little darkened in the middle and lightest at the edges. The sides of the abdomen are dark, or covered with dark spots close together toward the middle stripe and more scattered toward the sides. On the ventral side the abdomen has a middle dark stripe, sometimes lighter in the middle.

Though the markings vary but little the colors vary from light yellow, with pale gray markings, to dark reddish brown, with black and gray spots, the colors being usually modified by long gray hairs both in dark and light individuals. The joints of the legs are all dark toward the end. Large individuals are, as a rule, darker colored than small ones.

The palpi are long in both sexes. In the males the femur is long, the patella not much longer than wide, and without appendages; the tibia about as long as patella, widened at the distal end, the outer side extending forward along the edge of the tarsus and having a short blunt tooth, figs. 1*c*, 1*g*, 1*d*. The tarsus is large, the basal half oval and the tip narrowed into a long point. The palpal organ, especially the tube, which is largely developed in this species, instead of having a constant form, as in most spiders, varies extremely. The most common form is that shown in figs. 1*a*, 1*g*, with a stout flat tube coiled in one and a half turns under the tarsus, and with the tip turned outward away from the tarsus. On the outer side of the palpal organ near the end of the tube is a short thin tooth with the outer edge turned downward and the corner usually forming a blunt tooth directed toward the end of the palpus. This variety is found in spiders of all sizes and shades of color from all parts of the country. Among large spiders from various localities occurs the form of palpal organ shown in fig. 1*b*. In this the tube is much longer and more slender, and terminates in a sharp

point turned inward toward the tarsus. A third variety, shown in fig. 1*d*, occurs less often but on spiders of all sizes and from different parts of the country. The spiral here hardly makes more than one turn and is so small as to be covered entirely by the tarsus. At the tip the tube is twisted so as to turn the opening downward. This is the form named *Agalena americana* by Keyserling, in 1877, from Illinois; there is one in the Cambridge museum, from Penikese Island, Mass., named by Keyserling "var. *americana*," and I have seen specimens from Indiana, from Providence, R. I., New Bedford, Mass., and Brooklyn, N. Y., in N. Pike's collection. These three varieties seem to be distinct and I have seen no intermediate forms. Fig. 1*e* is a palpal organ from Providence, R. I., having an unusually large tube; fig. 1*f* is the palpus of a small spider from Jaffrey, N. H., in which the tube is slender and the spiral unusually small.

The shape of the external opening of the epigynum is even more variable than that of the palpal organ. The most common variety is shown in fig. 1*h*, taken from a female found in copulation with the male from which the palpus fig. 1*a* was drawn. Figs. 1*i*, 1*j*, 1*k*, show a slight variation from this form by short teeth on the front edge of the opening. Figs. 1*l*, 1*m*, 1*n*, have these teeth united and extending backward across the opening nearly dividing it into two. The three last are all from large dark colored spiders like those having palpi as in fig. 1*b*.

Comparison of a large number of specimens from the neighborhood of Boston, Mass., showed that 69 males had palpi like fig. 1*a*, and 5 like fig. 1*b*; 98 females had the oval epigynum, fig. 1*h*, and 37 the partly divided epigynum, figs. 1*l*, 1*m*, 1*n*.

The web of this species consists of a flat sheet, shaped according to the supports to which it is fastened, from one side of which extends a tube at the mouth of which the spider usually stands. The tube is open at the lower end, from which the spider escapes if the web is entered by too large an enemy.

The webs are made in all kinds of places. In early summer great numbers are made on short grass, but large webs are seldom made in such situations and it is probable that spiders that do not find more favorable places as they grow larger, never live to become adult. The largest webs and the best developed spiders are found among stones and shrubs where there are convenient hiding places and supports for the web, which in a good situation is enlarged as the spider grows until it becomes a foot or more wide and proportionally thick and strong. The long spinnerets are used in making

this flat web, the spider walking along slowly, swinging the spinnerets from side to side, making a band of very fine threads at each stroke. The web does not appear to be at all adhesive, it merely offers insects a convenient place to rest upon and the spider depends on his quickness of movement for their capture. Large webs usually have many supporting threads running up into fences and bushes and these perhaps help to trip the wings of flying insects and cause them to fall on the web, as similar threads do in the webs of *Linyphia*.

The pairing of this spider takes place on the web of the female. The female lies still with feet drawn up as if dead. The male lays her on one side under his thorax with her ventral side forward and inserts one of his palpi into the epigynum at frequent intervals for a long time, the soft parts of the palpal organ suddenly swelling and again contracting. When tired with one palpus he turns the female around and over so that she lies on the other side with her head in the opposite direction and uses the other palpus. The eggs are laid in a flat white cocoon, usually covered with a thick flat cone of silk with which considerable dirt is often mixed. The eggs are laid under stones or bark and on fences and buildings of all kinds, where they are partly sheltered, from August to October, and the females often remain and die on or near the cocoon. Adults are occasionally found under leaves in winter, but it is doubtful if any live until the next season. The eggs hatch early in the spring and the young spiders come out in May.

It appears to be the most common spider all over the United States.

Dysderidæ.

Spiders with only six eyes and with the openings of the tracheæ in the front of the abdomen, just behind those of the air sacs, so that they appear to have four air sacs like the *Mygalidæ*. The family is a small one and the genera differ greatly in the structure of the feet and mouth parts.

Dysdera interrita Hentz.

PLATE VIII, FIGURES 2, 2a, 2b, 2c, 2d.

Female 12^{mm} long. Cephalothorax 5^{mm} long and 3^{mm} wide. The front of the head is wide and curved forward in the middle. The eyes are small and close together. Pl. VIII, fig. 2. The mandibles are half as long as the cephalothorax and inclined forward and much narrowed toward the end. The maxillæ are small, pointed at the

tips and widest half way to the base of the palpus. Fig. 2a. The labium is long and widened at the base. The sternum is widest in the middle, narrowed behind, and truncated at the front end. The coxæ are very long, fig. 2a. The first legs are longest and the fourth next. The feet have only two claws and under them a thick brush of flattened hairs. Fig. 2b. The patellæ are only about a fourth shorter than the tibiæ. The abdomen is long, oval and a little pointed behind. The cephalothorax and mandibles are reddish-brown. The legs are lighter colored and more yellow and become a little darker from behind forward. The abdomen is dirty white or yellow without markings.

The male differs little from the female. The palpal organ is as long as patella and tibia of the palpus. The terminal half is a little curved inward, and on the outer side is a short blunt tooth a little curved upward. Figs. 2c, 2d.

Swampscott, Brookline, and Roxbury, Massachusetts. This is the only *Dysdera* I have seen from New England, and as Hentz's *D. interrita* came from Massachusetts, this is probably the species. It agrees very closely with *D. crocata* Koch = *D. rubicunda* Blk. The palpal organ of *D. interrita* is straighter, as seen from in front, than that of *crocata*.

Ariadne Savigny and Audouin.

Ariadne bicolor.

Pylurus bicolor Hentz.

PLATE VIII, FIGURE 3, 3a, 3b, 3c, 3d.

Female 9^{mm} to 10^{mm} long. Plate VIII, fig. 3. Cephalothorax long and narrow, widest opposite the third pair of legs. In the male the cephalothorax is proportionally much wider. The dorsal groove is very small, and the head is not separated very distinctly from the thorax. The abdomen is oval, widest across the middle. The first, second, and third pairs of legs are turned forward. The first pair is longest, the second next. The legs are all stout and the first and fourth pairs have the patella and tibia much thickened. The color of the cephalothorax and legs is darker from behind forward, the fourth legs being light yellow and the first legs and front of the head dark brown. The abdomen is pale at the sides and dark purplish-brown above and below, darkest along the middle of the back.

The feet have three claws, fig. 3d. The tibia and metatarsus of the first and second legs have two rows of strong spines on the under side, four pairs on the tibia and eight or ten pairs on the metatarsus. The sternum is long and widest in the hinder half. The maxillæ are

long and narrow, widened a little half way between the tip and the insertion of the palpus. The palpi are short and stout, fig. 3. The middle eyes are close together. The upper lateral eyes are about twice their diameter from the middle pair, and the front eyes are close to them, about half their diameter nearer the middle line.

The male is a little smaller than the female and has the thorax wider and the legs longer and more slender, fig. 3*a*. The metatarsus of the first feet is crooked at the base with a spine on each side, the outer one nearest the base, fig. 3*a*. The male palpi are but little longer or stouter than those of the female. The tibia is a little thickened. The palpal organ is attached to the under side of the tarsus; it has a round bulb about as thick as the tibia is long, which narrows on the outer side into a short finely pointed tube that curves sharply inward, fig. 3*a*.

It lives under stones and leaves, or in long yellowish tubes only wide enough to hold the spider under stones or in cracks of trees. In July and August the cocoon with twenty or thirty eggs is made in the tube with the female, and the young come out of the cocoon and live in the tube for a short time with the female.

Massachusetts, Connecticut, and in N. Pike's Long Island collection.

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EXPLANATION OF PLATES.

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 Fig. 3. *Anyphæna calcarata*, under side of coxæ of male, showing spurs on 3d and 4th pairs; 3a, 3b, 3c, male palpi; 3d, epigynum.
 Fig. 4. *Anyphæna saltabunda*, male palpus, under side; 4a, 4b, 4c, upper and side views; 4d, epigynum.
 Fig. 5. *Phrurolithus alarius*, in natural position at rest; 5a, light-colored variety; 5b, first leg; 5c, maxillæ; 5d, iridescent scales of abdomen; 5e, 5f, 5g, male palpi; 5h, epigynum.
 Fig. 6. *Phrurolithus pugnatus*; 6a, upper side of male palpus; 6b, outer side; 6c, epigynum, showing part of palpal organ in one side.
 Fig. 7. *Agræca pratensis*; 7a, sternum and mouth part; 7b, 7c, 7d, palpus of male; 7e, epigynum.

PLATE VII.

- Fig. 1. *Celotes medicinalis*, enlarged 4 times; 1a, epigynum; 1b, palpus of male, under side; 1c, upper side.
 Fig. 2. *Celotes longitarsus*, palpus of male, upper side; 2a, epigynum.
 Fig. 3. *Celotes montanus*, epigynum; 3a, palpus of male; 3b, patella and tibia of male from New Haven, Conn.
 Fig. 4. *Celotes hybridus*, male palpus, upper side of patella and tibia; 4a, under side.
 Fig. 5. *Tegenaria brevis*; 5a, epigynum; 5b, head of female; 5c, head of male.
 Fig. 6. *Tegenaria derhamii*, enlarged 4 times; 6a, palpus of male; 6b, tarsus and palpal organ; 6c, epigynum.
 Figs. 7, 7a, 7b. *Cicurina complicata*, male palpi; 7, under side; 7a, outer side with large process of the tibia separated from the tarsus; 7b, upper side, showing the narrow tarsus and short curved tibia.
 Fig. 8. *Hahnia bimaculata*, under side of abdomen, showing tracheal opening and spinnerets; 8a, male palpus, under side of tibia and tarsus; 8b, outer side of tibia and tarsus; 8c, 8d, 8e, 8f, various forms of epigynum.
 Fig. 9. *Hahnia cinerea*; 9a, male palpus, under side; 9b, outer side.
 Fig. 10. *Hahnia radula*, maxilla of male; 10a, hair of first leg of male.

PLATE VIII.

- Fig. 1. *Agalena nævia*, male; 1*a*, common form of male palpus from a specimen from Peabody, Mass.; 1*b*, long tubed variety of palpal organ from Woodbridge, Conn.; 1*c*, outer side of tibia of same palpus; 1*d*, short tubed form of palpal organ of a specimen from New Bedford, Mass.; 1*e*, palpal organ with unusually large tube of a specimen from Providence, R. I.; 1*f*, small palpal organ from Jaffrey, N. H.; 1*g*, outer side of small male palpus from Salem, Mass.; 1*h*, common form of epigynum from female in copulation with the male from which Fig. 1 was drawn; 1*i* and 1*j*, epigynum from Providence, R. I.; 1*k*, epigynum with small process on front edge from Salem, Mass.; 1*l*, 1*m*, 1*n*, epigynum from several large spiders from Massachusetts.
- Fig. 2. *Dysdera interrita*; 2*a*, sternum, coxæ, and mouth parts; 2*b*, foot; 2*c*, side of male palpus; 2*d*, palpal organ from front.
- Fig. 3. *Ariadne bicolor*, female; 3*a*, male, head, palpi, and front leg; 3*b*, sternum and mouth parts of female; 3*c*, male palpus; 3*d*, front leg of female.